MSTAR PRACTICE WORKSHEET

Lesson 2-10: Choose Appropriate Measures

Grade 6 Mathematics · Standard 6.DS.6d

Name: _____ Date: _____

These are MSTAR-style questions written for this curriculum to rehearse the format. They are not official Maryland assessment items. MSTAR — Maryland's new state test, first given in spring 2027 — uses the same kinds of questions you see here: selected response, select-all, two-part evidence questions, and written responses.

Part A — Skills Check

Warm up with the lesson's core skills — one best answer each.

Question 1 SELECTED RESPONSE · 1 POINT

A gymnast's scores are: 8.5, 8.8, 8.7, 8.6, 8.9. There are no outliers. Which measure best represents a typical score?

(A) Median

(B) Neither — the data is too small

(C) Both are equally bad

(D) Mean

Question 2 SELECTED RESPONSE · 1 POINT

A runner's mile times are: 7:10, 7:15, 7:12, 7:20, 12:00. The 12:00 was due to a cramp. Which measure best represents a typical mile?

(A) Mean — it uses all the data

(B) Median — the outlier 12:00 pulls the mean too high

(C) Mode — it shows the most common time

(D) Neither measure works

Question 3 SELECTED RESPONSE · 1 POINT

Data set: 5, 6, 7, 7, 8, 50. The mean is about 13.8 and the median is 7. Which better represents the typical value?

(A) Mean (13.8) — it includes all values

(B) Both are equally good

(C) Median (7) — the outlier 50 inflates the mean

(D) Neither works for this data

Question 4 SELECTED RESPONSE · 1 POINT

A baseball player's batting averages over 6 seasons are: .280, .295, .290, .285, .300, .110. The .110 was an injury-shortened season. Which measure better represents the player's typical batting average?

(A) Median, because the .110 outlier pulls the mean down

(B) Mean, because it uses all the data

(C) Mean, because .110 is a real season

(D) Neither measure works

Question 5 SELECTED RESPONSE · 1 POINT

A scout records points per game: 14, 16, 15, 17, 16, 58. To report a TYPICAL game, which measure of center is best?

(A) Mean, because it uses every game

(B) Range, because it shows the highest game

(C) Median, because 58 is an outlier that pulls the mean up

(D) Mode, because 16 appears twice

Question 6 SELECTED RESPONSE · 1 POINT

The equipment manager needs to order the MOST COMMON jersey size from this list: M, L, M, S, M, L, M. Which measure answers the question?

(A) Mean, because it averages the sizes

(B) Median, because it finds the middle size

(C) Mode, because it names the value that appears most

(D) Range, because it shows the size gap

Part B — Test-Format Questions

These match the state test's formats: two-part questions, select-all, and written responses.

Question 7 TWO-PART QUESTION

Part A

A data set of house prices contains one mansion worth far more than every other home. Which pair of measures best describes this data?

Fill in the bubble next to the one best answer.

(A) Median and IQR

(B) Mean and MAD

(C) Mean and range

(D) Mode and range

Part B

Answer Part A before Part B — Part B asks about your reasoning.

When are the mean and MAD the better choice?

(A) Whenever the data set is large.

(B) Whenever the values are whole numbers.

(C) Only when the median cannot be found.

(D) When the data is roughly symmetric with no outliers.

Question 8 SELECT ALL THAT APPLY

Select ALL statements that correctly guide the choice of measures:

Mark the box next to EVERY answer that is true. More than one is correct.

[A] Skewed data with outliers is better summarized by the median and IQR.

[B] Symmetric data with no outliers is well summarized by the mean and MAD.

[C] The mean is resistant to outliers.

[D] An outlier affects the range more than it affects the IQR.

[E] The shape of the distribution should influence which measures you report.

Part C — Show Your Thinking

Answer in writing, the way the state test's constructed responses work.

Question 9 WRITTEN RESPONSE · 2 POINTS

A local newspaper reports that the average home price in a neighborhood is $450,000. The actual prices are: $180K, $200K, $190K, $210K, $195K, $1,725K. Is the reporter's claim misleading? Calculate the mean and median and explain which better represents a 'typical' home price.

Write your answer in complete sentences. Show or explain your mathematical thinking.

When you finish, check your reasoning with your teacher or family. Your teacher has the scoring guide for the written responses.